

TRIPURA GAZETTE



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PART-- I--Orders and Notifications by the Government of Tripura,
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GOVERNMENT OF TRIPURA URBAN DEVELOPMENT DEPARTMENT

NO.F.16(15)-UDD/DUD/2018(P)/1931-65

Dated, Agartala, the 14th May, 2020.

NOTIFICATION

As per Tripura Municipal Solid Waste (Management & Handling) Cleanliness & Sanitation Rules 2019, the State Government is hereby notifying the 'Strategy to Achieve 100% Solid and Liquid Waste Management in the 20 cities of Tripura'.

By order of the Governor

(Kiran Gitte, IAS)

Secretary to Govt. of Tripura
Urban Development Department

GOVERNMENT OF TRIPURA
URBAN DEVELOPMENT DEPARTMENT

Strategy to Achieve 100% Solid and Liquid Waste Management in the 20 cities of Tripura

1. Background:

State Government in its Budget 2020-21 has announced to establish the goal for achieving 100% Solid Waste Management in urban areas by March 2021. The activities involved are 100% Source Segregation, Door to Door Collection from Residential areas and market areas, Processing & Legacy Waste Management in the urban areas.

Municipal solid and liquid waste management being such a sector where human health and environment are affected, the Hon'ble National Green Tribunal (NGT) has issued specific instructions to meet with the objectives of SWM Rules 2016. As per the order issued by the Hon'ble National Green Tribunal vide Original Application No 606 of 2018 dated 16.01.2019, 07.05.2019 & 28.02.2020, it is mandatory to implement the Solid Waste Management Rule-2016 issued by the Ministry of Environment, Forests and Climate Change, Government of India in time bound manner. Accordingly, the State Government in Urban Development Department has notified the **Tripura Municipal Solid Waste (Management & Handling) Cleanliness & Sanitation Rules 2019** and has taken initiative along with the 20 (twenty) Urban Local Bodies to achieve 100% coverage of Solid and Liquid Waste Management activities in the State.

2. Objectives of the Initiative:

- To ensure daily 100 % door to door collection of municipal solid waste along with source segregation i.e. dry waste (non bio-degradable waste) & wet waste (bio-degradable waste).
- To recycle-reduce-reuse the dry waste.
- To process the wet waste (bio-degradable waste)
- To ensure sustainable livelihood and empowerment of women from poor and marginalized sections by involving them in the process of Solid Waste Management and Swachh Bharat Mission as per the convergence guidelines issued by MoHUA, GoI 2018 "Empowering Marginalized Groups- Convergence between NULM and SBM."
- To ensure scientific treatment and management of legacy waste.
- To ensure scientific Liquid Waste Management (Septage Management) in all the ULBs.
- To ensure regular training and capacity building of all the stakeholders involved in the process of Solid Waste Management.
- To ensure change in the attitude and behavior of people through continuous IEC campaign.

3. Volume of Solid and Liquid Waste Generated in the State:

Tripura has an estimated urban population of 8.87 lakhs, with Agartala Municipal Corporation (AMC) being the largest city with a population of about 5.22 lakhs. The estimated numbers of households in the 20 ULBs are 2.2 lakhs, of which about 1.3 lakhs are in AMC area.

The need for proper MSW collection & transportation as well as processing & disposal has been realized by all the residents, shop keepers, service providers and the hospitality industry. As per the ULB data, total quantity of solid waste generated in urban areas of Tripura is 423 MT per day. Bio-degradable food waste is estimated to be about 50% of the total waste generation.

The average per capita generation of solid waste in Tripura is assumed to be 0.425-0.45 kg/per capita/day compared to national average of 0.45 Kg/ capita/ day (CPHEEO) for urban areas. It is assumed that the waste generation from High-income groups to be 0.40 - 0.45 kg/day and from the low-income groups between 0.35-0.40 kg/day.

Total municipal solid waste generated is 423 TPD in Tripura, out of this 405 TPD waste is collected and 389 TPD is segregated and transported. Only 164 TPD waste is being processed as of now, although the secured land fill capacity is 212 TPD. Total composting capacity of the state is 350 TPD. However, Door-to-Door collection, with source segregation has commenced in 285 out of 310 total wards throughout the State of Tripura. Detail Urban Local Body wise status is enclosed in Annexure I.

For legacy waste management, a scientific treatment of Legacy Waste has been initiated by Agartala Municipal Corporation (AMC) for the Hapania Dump Site.

For liquid waste management, the estimated Sewage Generation in Agartala City is 48.6 MLD. At present there is an 8 MLD capacity STP that has been operating to cater the demand of the citizen in the northern part of Agartala City; initiative is taken under Smart City Project to set up another 8 MLD STP in the central Zone of Agartala near Akhaura check post. It is also targeted to set up at least one Faecal Sludge Treatment Plant (FSTP) in 15 Urban Local Bodies who do not have access to such a facility. 100% Liquid waste management is essential for sustainable Open Defecation Free (ODF) practices and abating river pollution as well.

4. Present problems/difficulties in Solid and Liquid Waste Management:

1. Door to door collection of municipal solid waste is not adequate. As per one estimate door to door collection of solid waste is only 50-60 %. Thereby the solid waste is thrown by the people on roads, drains, water bodies, rivers leading to pollution.
2. Source segregation of solid waste is not done properly.
3. Re-segregation of dry waste into various sub-components such as glass, plastic, paper, rubber, metal etc. is not done properly.
4. Except Agartala and Kamalpur, there are no SWM processing facilities in other ULBs.
5. Septage Management is not practiced efficiently.

6. Construction and Demolition Waste is not disposed scientifically.
7. Treatment of Legacy Waste has not been done till date.

5. Solid Waste Management Model adopted by the State:

Initially a centralized model of SWM was to be followed for all the ULBs with SWM clusters at eight locations. However, taking into consideration very low revenue generation by the ULBs other than AMC for O & M of SWM plants and heavy equipment and machineries, decentralized women SHG based SWM model (Ambikapur model) has been preferred for 19 ULBs other than AMC. In AMC, mixed model including Women SHG based door to door collection & source segregation of solid waste, collection of market solid waste on outsourced basis and processing of waste on outsourced basis in 250 TPD SWM Plant etc. has been preferred as AMC has well established 250 TPD SWM Plant and transportation infrastructure.

The UD Department, Government of Tripura has empaneled renowned SWM expert Sri C. Srinivasan, Project Director of Indian Green Service as State SWM Consultant for capacity building of various stakeholders involved in Solid Waste Management activities. This model involves following steps in collection, segregation and processing of solid waste:

1. Door to Door waste Collection and segregation through Women SHGs:

As per the data from various ULBs, till date 127 SHGs have been formed for door to door municipal waste collection with source segregation. These SHGs have been registered under NULM. One SHG of 10 women can collect municipal waste from maximum 1000 house i.e. one member to collect from 100 houses daily. Every SHG must be provided with five tricycles i.e. one tricycle per two members. The process must be made self-sustainable by charging user fees Rs. 60 per household per month. Ideally if 80-85 % of household pay user fees gradually, every SHG can generate Rs. 50,000 per month. For better collection, user fees are to be collected by the women SHG members themselves on behalf of the ULB. A collected fee must be deposited in the SHG account. Tri Partite agreement must be signed between the ULB, Bank and SHG. The members are to be provided with equal share i.e. one member of SHG should get Rs. 5000 per month to retain her and to keep up her motivation. It has been noticed that if the service of door to door collection is regular, people generally pay user fees.

2. Source Segregation:

SHGs were trained for source segregation. The SHG women are to put wet waste (bio degradable waste) in nearby SWM container. Dry waste is to be collected by SHG women in gunny bags and to be carried to the nearby dry Secondary Treatment Centers/ Material Recovery Facility for waste segregation/sorting.

3. Re-segregation of dry waste in the Dry Waste Segregation Centers (Secondary/ Material recovery Facility Centre) through SHGs:

The SHG women after collection of waste should put the wet waste in nearby 1.1 Cu M container of AMC and should bring the dry waste to Dry Waste Segregation Center to further segregate into various components such as glass, paper, rubber, metal, plastic etc. The recycled waste may be sold in the market or may be used for road construction through NHAI.

4. Transportation of collected bio-degradable waste:

The bio-degradable waste has to be transported to the dump yard for processing (composting). In case of AMC, the bio-degradable waste is to be processed through 250 TPD SWM Plant in AMC or to be Tertiary Processing Centers in other ULBs through community vermi-composting on the pattern of Ambikapur Model.

5. Processing of Bio-degradable Waste at SWM Processing Centers (tertiary Centers):

Collected bio-degradable waste has to be processed in the SWM processing plants (processing centers) to generate compost. The ultimate aim is to ensure zero landfill in due course of time.

6. Statutory Steps taken by Urban Development Department:

1. Tripura Municipal Solid Waste (Management & Handling) Cleanliness & Sanitation Rules 2019: framed under the Tripura Municipal Act 1994 as per the model rules given by the MoHUA, GoI.
2. The Tripura Construction and Demolition Waste Management Policy 2019: It provides for scientific management of Construction and Demolition Waste 2019 under which there is provision of setting up of Construction and Demolition Waste Management Plants for Agartala, Dharmanagar and Udaipur on PPP basis.

7. Proposed Actions for Augmenting Existing/Ongoing Infrastructure in 2020-21

1. Functioning of 250 TPD SWM Plant:

Agartala and surrounding urban agglomeration accounts for about 60% of urban population the State. There is a 250 MT SWM Plant at DC Nagar. However due to pending litigation with the operating Agency, proper O & M of the plant is not being done. Recently, the Court appointed arbitrator has given the verdict in an Arbitration Case to pay Rs. 76.00 Lakh to that firm which was denied by AMC earlier and nullified the termination of the private agency by AMC citing procedural lapses. Both AMC as well as the private agency concerned have filed appeal in civil court against the verdict of the arbitrator. In order to ensure processing of daily generated solid waste along with accumulate solid waste and legacy waste, this plant should run ideally at least 16 hours a day.

2. Management of Construction and Demolition Waste:

AMC generates huge amount of C & D waste annually. However due to lack of C & D Waste Management Plant, C & D Waste is dumped at several places for land filling etc. It was advised by the UDD to set up C & D Waste Management Plant on PPP basis as per the C & D Waste Management Policy 2019 of Government of Tripura. It is one of the obligations as per the verdict of Hon'ble NGT as Agartala has been declared as Model City for SWM in Tripura. Accordingly, in order to save initial investment, AMC floated online tender to set up C & D

Waste Management Plant on PPP (Buy-Back) basis. Land has been identified near the present SWM Plant DC Nagar. One Agency has been finalized through online tender process before few months. The concept is that the C & D Plant will be set up on PPP basis. The Plant will produce mechanical bricks, pavers, tiles etc. using C & D waste which AMC will buy back upto certain quantity yearly. PWD (R & B) & RD Department may buy back the rest of the construction materials produced. This material can be procured from C & D Plant after ensuring the quality. Also, the same Agency/Vendor will run the existing 250 TPD SWM Plant without any extra cost to AMC. Also, management of C & D waste will be done without any extra cost to AMC. The matter was discussed and recommend from the State Level Committee chaired by the Chief Secretary.

3. Management of Legacy Waste:

As per the report sent by the TSPCB to CPCB, there is 5000 MT legacy waste in Tripura. Large quantity of legacy waste is present in the Hapania dump yard of AMC which has been abandoned by AMC before few years. Also due to non-functioning of 250 TPD SWM Plant at DC Nagar properly, there is huge quantity of accumulated solid waste in DC Nagar Dump Yard. All the legacy waste needs immediate processing and treatment to fulfill the obligations and commitment given by the State to the NGT. Already AMC has involved National Environmental and Engineering Research Institute (NEERI), Nagpur for this purpose.

4. Septage Management in AMC:

AMC has sufficient number of Vehicle Mounted Mechanical Suction Machines (Cesspools). Recently large number of such machines have been procured for AMC under ADB funding and already handed over to AMC. AMC charges Rs. 1500 per trip which is more or less self-sustaining venture financially. AMC has been included as the only ULB in Tripura under ODF ++ (proper treatment of liquid waste) protocol by MoHUA GoI. There is need to bring more efficiency in liquid waste management in Agartala and surrounding urban agglomeration to reduce contamination of water bodies, rivers due to septage.

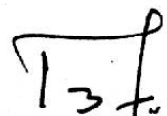
8. Proposed Actions for New Initiatives for Solid & Liquid Waste Management

For effective solid & liquid waste management the following proposals are put up before council of Ministers for consideration.

- (i) Deployment of women SHGs in remaining wards as per the ratio 1 SHG per 1000 houses
- (ii) Procurement of 100 nos. Battery operated tricycles and 1276 nos. manual tricycles for door to door waste collection with source segregation. Fund has already been placed to AMC for necessary action (Estimated Fund Required ₹ 6.97 crore)
- (iii) Procurement of various other equipment and vehicles (as per Annexure II) such as Wheel borrough, Skid Steer Loader, Refuse Compactor Vehicle with Chasis, Shredder Machine, Plastic Granulating Machine & Sieving Machines (Estimated Fund Required ₹ 11.9916 crore)

- (iv) Setting up of required (310 no.) Dry Waste Segregation Centres for re-segregation of dry waste for recycling as per Annexure III. (Estimated Fund Required ₹ 16.6743 crore).
- (v) Setting up of required (23 Nos.) Solid Waste Processing (Composting) Tertiary Centers for composting of wet (bio-degradable Waste). (Fund ₹ 8.6794 crore). The list of land sites required and identified by the ULBs is given at Annexure IV.
- (vi) Procurement of personal protective equipment and tool kits for door to door waste collection. (Fund ₹ 0.6924 crore)
- (vii) Setting up of low capacity Mechanical Faecal Sludge Treatment Plants @ one at all ULBs other than AMC, Ranirbazar, Jirania, Mohanpur, Bishalgarh. List enclosed at Annexure V (Estimated Fund Required ₹ 6.018 crore)
- (viii) Selection of agencies / SHGs to manage secondary and tertiary processing centers. UDD shall establish Standard Operating Procedures (SOP) to run the facilities and facilitate ULBs to operate them.
- (ix) In-situ treatment of sewage flowing through storm water drains into river under all ULBs using bioremediation technology. List of such drains under AMC area provided in Annexure VI.
- (x) Purchase of all equipment and machineries may be done centrally by AMC. Tender for Faecal Sludge Treatment Plants may be done centrally by UD (Engg. Wing). Tender process for Setting up of Dry Waste Segregation Centers, Tertiary Centers and In-situ treatment of sewage in drains, as described above, may be done by respective ULB
- (xi) Financial Provisions for above activities:
 - (a) The Urban Development Department had submitted DPR for Solid Waste Management to the Ministry of Housing and Urban Affairs. The Ministry has approved DPR with cost of INR 52.01 Cr. The central share is 35% of the DPR cost (INR 18.20 Cr), out of which the first installment of INR 7.76 Cr. has been released by MoHUA. The State share is 65% of the DPR Cost (INR 33.80 crore).
 - (b) 15th Finance Commission funds may be utilized for the activities which are not covered under the above DPR.
 - (c) In addition, the provisions under the Rural Infrastructure Development Fund (RIDF) may be made for taking up the above projects.
 - (d) Funds have also been sought from Tripura Oil and Natural Gas Corporation's (ONGC) corporate social responsibility (CSR) fund to co-finance the DPR projects.
- (xii) Proposed Timelines for implementation of above activities are as follows.
 - 1. Selection of respective land at ULBs - June 2020.
 - 2. Selection of SHGs for door to door collections - June 2020.
 - 3. Procurement of equipment - October 2020.
 - 4. Procurement of vehicles for transportation - October 2020.
 - 5. Construction of Secondary and tertiary processing centers - March 2021.

6. Engagement of agencies to operate secondary and tertiary centers - May 2021.
7. In-Situ treatment of drains - May 2021.
8. Procurement of septage treatment plants and erection - May 2021.



(Kiran Gitte)
Secretary to the
Government of Tripura

Annexure I: ULB-wise Solid Waste Management Status

Sl. No	Name of ULB	Door to Door Waste Collection	Total Waste Generated (TPD)	Total Waste Collected (TPD)	Total Waste Segregated & Transported (TPD)	Total Waste Processed- Wet Waste (TPD)	Total Waste Processed Through Recycling /other sources- Dry Waste (TPD)
1	Agartala	44	240	240	240	140	0
2	Jirania	5	2.3	1.8	1.5	0.5	0.2
3	Mohanpur	13	2.3	0.35	0.35	0.1	0.25
4	Ranirbazar	13	4.02	4.02	4	0.5	0.15
5	Dharmanagar	15	11.1	11.1	10	5.1	0
6	Panisagar	13	2.6529	1.112	0.9	0.212	0.3
7	Belonia	11	6.5	3	3	0	0
8	Santirbazar	15	11.64	11.64	11.64	0	0
9	Sabroom	9	6.25	3.25	3.25	0.8	0
10	Ambassa	13	5.19	5.19	4	0.085	0.015
11	Kamalpur	12	20	20	19	0.3	0
12	Bishalgarh	15	10.3671	10.3671	10	0.2	0
13	Melaghar	13	7	7	7	0	0
14	Sonamura	11	10	10	9	2.5	3.5
15	Amarpur	11	7.8	5.8	3.8	0	0.3
16	Udaipur	21	18.5	18.5	15	0.4	0
17	Teliamura	20	22.5	22.5	19.5	0	1
18	Khowai	10	8.5	6	6	1	0.5
19	Kailashahar	8	16.18	16.18	13.91	0.5	0.5
20	Kumarghat	13	10.2	7.2	7.2	4.6	0.5
Total		285	423	405.0091	389.05	156.797	7.215

Annexure: II: Summary of Equipment and Vehicles to be Procures

Primary Collection with Source Segregation				
Sl.	Item	Capital Cost (INR Cr.)	Operations Cost (INR Cr.)	Total Cost (INR Cr.)
1	Wheel borough	0.5322	0.0532	0.5855
Secondary Collection & Transportation Vehicles				
1	Skid Steer Loader	1.98	0.1978	2.1753
2	Refuse Compactor Vehicle with Chasis	5.62	0.5622	6.1842
Secondary & Tertiary Waste Sorting & Segregation Centers (STWSSC)				
3	Shredder Machine	0.31	0.0305	0.3359
4	Plastic Granulating Machine	2.17	0.2171	2.3883
5	Sieving Machines	0.29	0.0293	0.3224
(Various other Equipments) Total -		10.9014	1.0901	11.9916

Annexure III: ULB-wise Requirement of Secondary and Tertiary Centers

Sl.	City / Town / ULB	Secondary Segregation Centers		Pilot Tertiary Segregation Centers	
		No. of Tertiary Centers	Estimated Cost (INR)	No. of Tertiary Centers	Estimated Cost (INR)
1	Agartala	49	81,768,610	4	12,578,800
2	Jirania	11	1,867,952	1	3,144,700
3	Mohanpur	13	2,900,986	1	3,144,700
4	Ranirbazar	13	2,476,451	1	3,144,700
5	Dharmanagar	23	7,185,519	1	3,144,700
6	Panisagar	11	1,867,952	1	3,144,700
7	Belonia	15	3,314,635	1	3,144,700
8	Santirbazar	13	2,448,149	1	3,144,700
9	Sabroom	9	1,121,751	1	3,144,700
10	Ambassa	13	2,646,265	1	3,144,700
11	Kamalpur	11	1,766,172	1	3,144,700
12	Bishalgarh	15	3,682,020	1	3,144,700
13	Melaghar	13	3,120,329	1	3,144,700
14	Sonamura	11	1,969,731	1	3,144,700
15	Amarpur	11	1,861,965	1	3,144,700
16	Udaipur	21	5,954,913	1	3,144,700
17	Teliamura	15	3,608,543	1	3,144,700
18	Khowai	15	3,347,291	1	3,144,700
19	Kailashahar	15	3,665,692	1	3,144,700
20	Kumarghat	13	2,377,393	1	3,144,700
	Total	310	138,952,319	23	72,328,100

In addition, operations cost is taken as 20% of the capex over the five years period towards water and electric bills, material procurement, wear and tear, repair, maintenance and replacement for the secondary and tertiary segregation centers.

Annexure IV: ULB-wise Data on Land Identified for Secondary and Tertiary Centers

Sl. No.	Name of ULB	Required No of SLRM + MRF (Tertiary) Centers	No Land Selected for SLRM Centers	Required No of MRF Facility as per DPR	No Land Selected for MRF Facility	Remarks
1	Agartala	4	—	49	34	Master segregation center at Chandimura
2	Jirania	1	—	11	1	Land selected for MRF
3	Mohanpur	1	0	13	0	Yet to be selected, Old Taranagar T.K office is used for dry segregation
4	Ranirbazar	1	1	13	1	Ongoing
5	Bishalgarh	1	1	23	0	At present 1 no SLRM center is arranged
6	Melaghar	1	1	11	1	Ongoing
7	Sonamura	1	1	15	1	Ongoing
8	Belonia	1	1	13	2	Ongoing
9	Sabroom	1	1	9	1	Ongoing
10	Santirbazar	1	0	13	1	1 No old vocational training center is currently being used as as MRF
11	Khowai	1	1	11	0	For MRF Locations of Lands are Proposed by the ULB only, but not yet finally selected.
12	Teliamura	1	1	15	2	Ongoing
13	Ambassa	1	0	13	0	Ongoing
14	Kamalpur	1	—	11	—	Dumping Ground
15	Amarpur.	1	0	11	3	Ongoing
16	Udaipur	1	0	21	1	Ongoing
17	Dharmanagar	1	0	15	1	Land will be selected shortly
18	Panisagar	1	0	15	1	Ongoing
19	Kailashahar	1	0	15	3	Ongoing
20	Kumarghat	1	0	13	2	Ongoing

Annexure V: ULB-Wise Requirement for Faecal Sludge Treatment Plants

Sl.	City / Town / ULB	Liquid Waste Plants		
		Needed Treatment Capacity (KLD)	Plant Capacity (KLD)	Estimated Cost of LWM Plant (INR)
1	Agartala	N/A	N/A	N/A
2	Jirania	N/A	N/A	N/A
3	Mohanpur	N/A	N/A	N/A
4	Ranirbazar	N/A	N/A	N/A
5	Dharmanagar	96.30534125	100	5,133,000
6	Panisagar	25.0548775	50	4,159,500
7	Belonia	44.44313	50	4,159,500
8	Santirbazar	32.83914125	50	4,159,500
9	Sabroom	15.0564325	50	4,159,500
10	Ambassa	35.48356625	50	4,159,500
11	Kamalpur	23.648715	50	4,159,500
12	Bishalgarh	N/A	N/A	N/A
13	Melaghar	41.85747	50	4,159,500
14	Sonamura	26.42746	50	4,159,500
15	Amarpur	24.94784125	50	4,159,500
16	Udaipur	79.80077125	100	5,133,000
17	Teliamura	48.3510025	50	4,159,500
18	Khowai	44.88596625	50	4,159,500
19	Kailashahar	49.1485275	50	4,159,500
20	Kumarghat	31.87791375	50	4,159,500
Total		620		64,339,500

Annexure VI: List of Drainage Water Discharge Directly to Haora River under AMC

Sl. No	Zone	Ward No.	Name of the Drain	Out Flow
1	Central Zone	32	Howra Natun Palli (Gita Mandir) drainage pump Water	In Howra River
2		32	Hospital Rd. Extn. Drainage pump water	In Howra River
3		32	Forest Basti Dainage Pump water	In Howra River
4		32	Small drain near Gita Mandir Direct Drain	In Howra River
5		35	South Joynagar Middle point 2 nos drain	In Howra River
6		35	Drain Near Wooden Bridge	In Howra River
7		35	Ambedkar Colony 2 Nos Drain	In Howra River
8		35	Drain at Raj Nagar School near Pump House	In Howra River
9		35	Drain at Indira Colony 3 Nos drain	In Howra River
10	East Zone	09	Chandrapur Partha Chakraborty House road Drain	In Howra River
11		25	Swapan Miah and Gufur Miah House to Howra River	In Howra River
12		25	Iman Miah and Sayd Miah House to Howra River	In Howra River
13		28	Khudhram para via Agradut para to Vidyasagar Market and rest part connected to AMC ward No. 30.	In Howra River
14		28	Vivekananda Lane to Howra River (AMC drain)	In Howra River
15		28	Banik Para to Howra River (AMC drain)	In Howra River
16		30	From Barmatilla via Vidyasagar Bazar via Ice factory to Howra river Urban drain.	In Howra River
17	South Zone	43	Bangweswar River	In Howra River

Note: Tender has been floated for 5 drains for bioremediation